



# **TOBACCO EXCISE: HISTORICAL TRENDS AND FORECASTING METHODOLOGY**

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  - <sup>2</sup> The views expressed in this paper are those of the authors and do not necessarily reflect those of The Australian Treasury or the Australian Government.

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Tobacco Excise: historical Trends and Forecasting Methodology  
2019-03  
June 2019

## **ABSTRACT**

Tobacco excise has grown strongly over the last few years as significant increases in the excise rate have been only partly offset by declining rates of smoking. This paper examines historical trends in tobacco excise, focussing on the recent past including the impact of significant policy changes over the last decade, and then discusses how tobacco excise is forecast and the key challenges in doing so.

Keywords: Tobacco excise

## INTRODUCTION

Excise has been a significant and stable source of tax revenue as it relies on comparatively regular patterns of economic behaviour and tax payments from year to year. This contrasts with revenue sources such as company tax, where factors ranging from commodity prices to the operation of the tax payments system can have a large bearing on receipts in any given year. Being relatively stable, excise has generally been forecast with greater accuracy than many other taxes.

Tobacco excise, the focus of this paper, has grown strongly over the last few years as significant increases in the excise rate have been only partly offset by declining rates of smoking. This paper will examine the historical trends in tobacco excise, focussing on the recent past including the impact of significant policy changes over the last decade, and then discuss how tobacco excise is forecast and the key challenges in doing so.

## TOBACCO EXCISE

Tobacco excise is applied to processed tobacco leaf<sup>3</sup>, predominately in the case of cigarettes, cigars and loose leaf tobacco. As an excise, it is imposed on the product according to the *quantity* of the excisable substance in the product, consistent with the excise regimes applying to fuel and alcohol. This contrasts with other taxes, such as the Goods and Services Tax (GST), which are levied on the *value* of the products. The rates of excise taxes in Australia are typically indexed to increase with either inflation or wages.

Cigarettes, cigars and loose tobacco are excisable goods if they are produced or manufactured in Australia. This excise is collected by the Australian Taxation Office (ATO). Imported tobacco products are subject to an equivalent customs duty instead of excise duty, collected by the Department of Home Affairs, in order to maintain a consistent tax treatment regardless of whether the product is manufactured domestically or imported. Along with other taxes, tobacco excise and tobacco excise equivalent customs duty are both parts of the consolidated revenue of the Commonwealth. For the purposes of this paper, both are simply referred to together as 'tobacco excise'.

There are two broad categories of excisable tobacco: sticks (cigarettes), which are taxed on a 'per stick' basis, and loose leaf (cigars, loose tobacco and other tobacco products), which are taxed according to weight<sup>4</sup>. For taxation purposes, the loose leaf and tobacco excise rates are set to be broadly equivalent according to the weight of tobacco in each<sup>5</sup>.

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3 Excise Tariff Act 1921, The Schedule.

4 A full list of tobacco taxation product categories can be found on the Department of Home Affairs website.

5 Until 2017-18 the equivalence was based on the assumption that a cigarette contained 0.8 grams of excisable tobacco. In the 2017-18 Budget the Government announced that this assumption would change to 0.7 grams of tobacco per cigarette. In order to maintain equivalence, the excise rate on loose leaf tobacco would be raised accordingly. The adjustment began in September 2017 and will be phased in over four years, from 2017 to 2020, with a step-up on the loose leaf tobacco rate beyond the regular indexation and previously announced excise rate increases on 1 September each year.

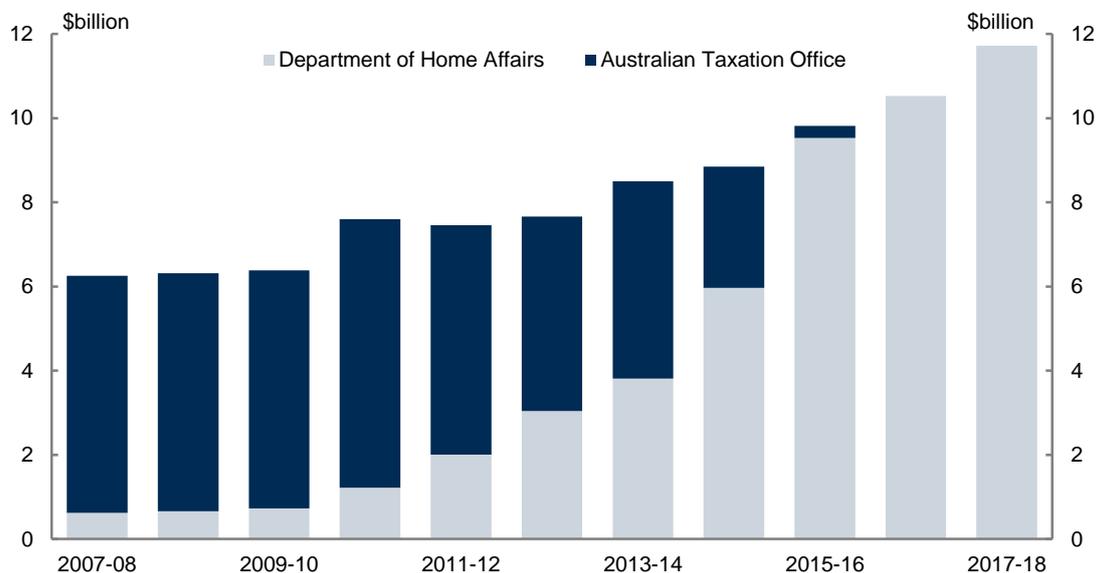
## How tobacco excise is collected

Tobacco excise is levied on tobacco products as they are cleared from licenced warehouses in which they are stored after they are manufactured (if they are manufactured in Australia) or imported (if they are manufactured overseas).<sup>6</sup>

As shown in Chart 1, in recent years there has been a shift in the collection of tobacco excise from the ATO to the Department of Home Affairs. This is because the manufacture of licit commercial tobacco products sold in Australia, dominated by a few large multinational corporations<sup>7</sup>, has moved from being mostly in Australia to being entirely overseas. As of 2016-17, all tobacco excise is being collected by the Department of Home Affairs. There is currently no legal tobacco product manufacturing in Australia.

After the tobacco products are cleared there is still some time before they are purchased by consumers, due to the distribution process, which may include further warehousing. The relocation of tobacco production offshore in particular has altered the timing of the distribution process, as discussed later.

**Chart 1. Tobacco excise collected by the Department of Home Affairs and the Australian Taxation Office**



6 Note as part of the Government's Illicit Tobacco Package (2018-19 Budget), from 01 July 2019, the taxing point of tobacco is being brought forward to the point of importation or manufacture and warehousing will be abolished. Tobacco will be taxed when it enters the country rather than being stored initially in a pre-tax state. Legislation for this core proposal has passed.

7 The three dominant manufacturers and/or importers in the Australian market are: British American Tobacco; Phillip Morris; and Imperial Tobacco.

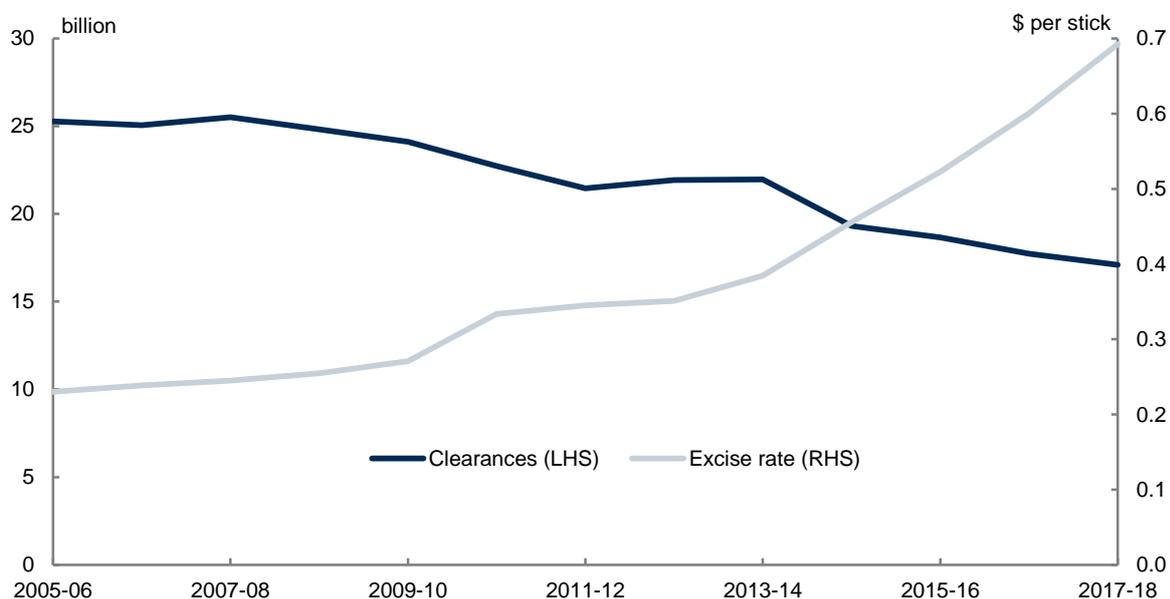
# HISTORICAL TRENDS IN THE TOBACCO MARKET IN AUSTRALIA

## Policy history

Long-term trends in tobacco excise have mostly been driven by a declining volume of tobacco products cleared, more than offset by an increasing rate of tobacco excise (Chart 2), such that total tobacco excise has increased over time. Declining volumes have been driven by growing societal awareness of the negative health effects of smoking and Government policy to reduce its total consumption. On a per-capita basis<sup>8</sup>, rates of smoking decreased by around 53 per cent over the decade from 2006-07 to 2016-17.

The effectiveness of particular policies is difficult to distinguish from other policy and from the general societal trend towards less smoking, but there is a clear relationship between higher prices – partly because of the excise rate – and lower consumption, as discussed below.

**Chart 2. Tobacco clearances<sup>9</sup> (sticks and stick equivalents) and excise rate**



Policies can be broadly divided into two mechanisms; those that increase the price of tobacco and those that reduce demand for tobacco by reducing its appeal, for example by health warnings or limiting the locations for smoking. Chart 3 shows the annual growth in consumption and price for tobacco since 1975-76. Policy changes are mapped against the annual price growth series for those affecting the excise rate and other taxes on tobacco, and against the annual consumption per capita growth series for those targeted at demand for tobacco products.

A brief description of some of the major policies follows.

<sup>8</sup> Australia’s resident population aged 18 years and over, ABS series 3101.0

<sup>9</sup> ‘Clearances’ refers to the quantity of tobacco products, largely cigarette sticks, cleared for home consumption. Quantities of loose-leaf tobacco products are converted to sticks assuming 0.7 grams per stick-equivalent.

## **Excise rate policy before 1999**

Tobacco has been subject to excise and customs duty in Australia since Federation, with excise schedules regularly updated to increase the rate. In 1983 the excise and customs duty rates were indexed to consumer price index (CPI) to automatically update bi-annually, in 1987 the tobacco rate was set constant across cigarettes, cigars and loose leaf, and in 1995 the rates of excise and customs duty were equalised. There was a series of additional rate rises that amounted to around 50 per cent in three years from 1992 to 1995.

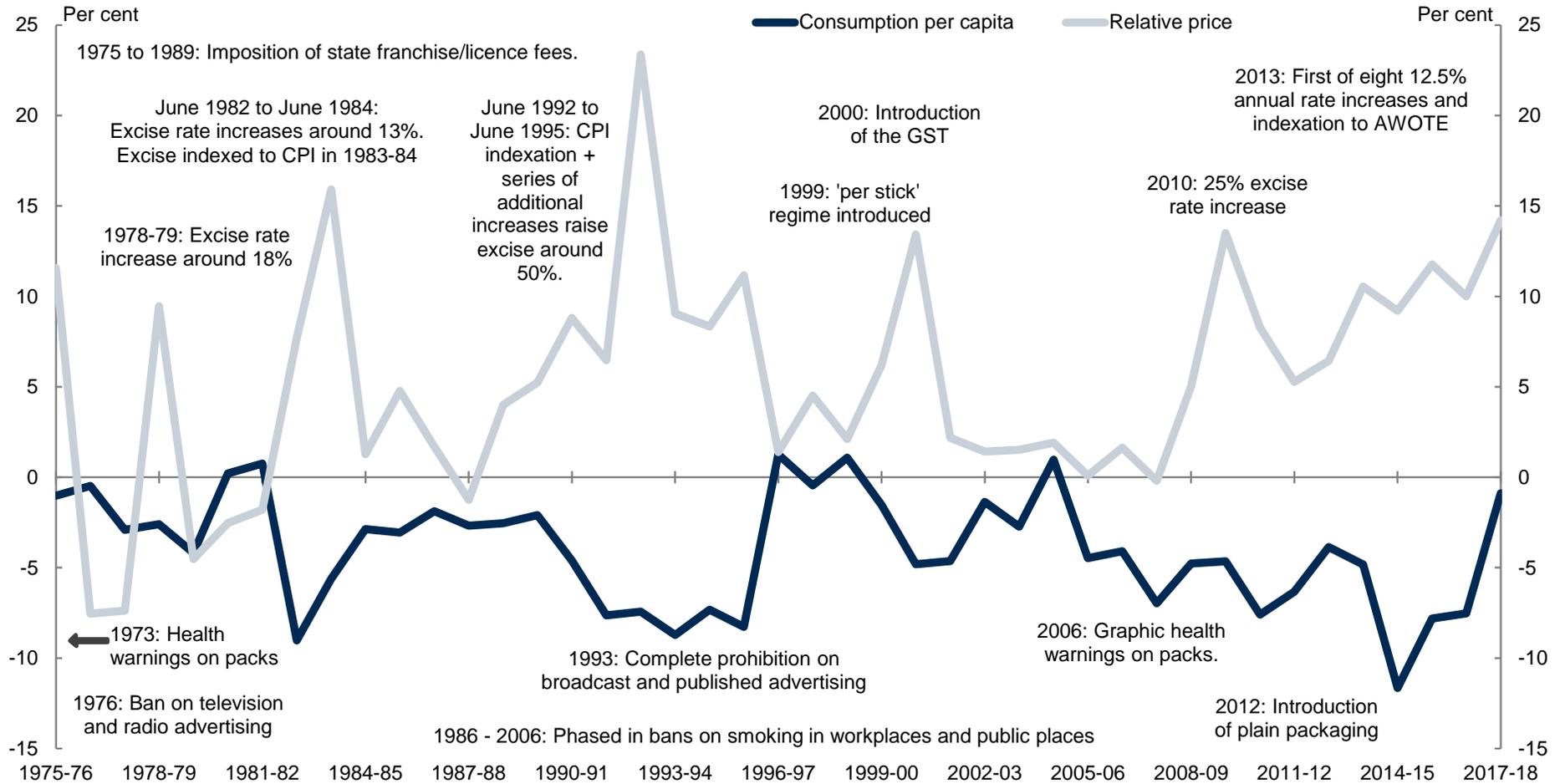
Between 1974 and 1989 every state and territory introduced business franchising fees that included a percentage of sales levy on tobacco products. These fees were continuously raised until business franchising fees were ruled unconstitutional in 1997<sup>10</sup>, as they were essentially an excise and beyond the powers of states and territories to impose. It was agreed between the Commonwealth and States that the loss of these business franchise fees would be compensated through the GST, and that the excise payable on cigarettes would be no lower than the existing level of duty.

Between August 1997 and June 2000 compensation to the States operated via an excise surcharge.

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<sup>10</sup> *Ha v New South Wales* (1997) 189 CLR 465

**Chart 3. Yearly growth in per capita household consumption of tobacco and the relative price of tobacco**



Consumption per capita is based on the yearly chain volume in ABS series 5204.0 divided by the 18+ population in series 3101.0. Relative price is based on quarterly ABS series 6401.0, using tobacco price inflation less CPI inflation through the year to the June quarter.

## **Excise Rate Policy since 1999**

The current per-stick regime replaced the previous weight-based tobacco excise system in November 1999 and was designed to prevent manufacturers minimising costs by reducing the weight of each cigarette and putting more into larger packs. Low cost cigarettes were particularly attractive to price sensitive smokers, including youth, and taxing all cigarettes as though they had 0.8 grams of tobacco raised the cost of these particular products. Taxing all cigarettes under the assumption that they contain 0.8 grams of tobacco, rather than each one on an individually weighted basis, was estimated to yield around \$2.4 billion in 2017-18<sup>11</sup>. All other tobacco products are taxed under the tobacco rate-equivalent loose-leaf tobacco regime.

Unlike many other products, the burden of other taxes on tobacco was not lowered to offset the price effect of the GST when it was introduced in 2000. As a value-add tax, it is an additional 10 per cent on the final price of tobacco, including the excise rate.

Successive Governments have legislated a series of excise rate increases in recent years, beginning with a one-off 25 per cent increase effective from 29 April 2010, followed by two successive four-year periods of 12.5 per cent annual increases from 2013 to 2020. These are in addition to the bi-annual indexation of the excise rate, which was to CPI until 1 March 2014, when it was re-indexed to Average Weekly Ordinary Time Earnings (AWOTE).

## **Health campaigning advertising**

Health awareness campaigning on the risks of smoking has been prevalent in Australia since the early 1970s. These were largely driven by State Governments until the National Tobacco Campaign in 1997.

A significant feature of the health campaigning has been the requirement for tobacco packets to display certain health warnings as set by the Government. These have progressively increased in prominence to the current requirements that cigarette packaging displays health warnings that cover at least 75 per cent of the front of the pack and 90 per cent of the back, including graphic images of negative health effects.

## **Advertising bans**

Advertising bans on tobacco have been progressively broadened to include radio, television, print and point-of-sale advertising, and in 2012 it was made an offence for any person to publish tobacco advertising on the internet or other electronic media, with limited exceptions.

## **Smoke-free environments**

The move to ban smoking from certain environments has been particularly driven by concerns over the effect of second-hand smoke. By the early 1990s many workplaces had introduced smoke-free workplaces policies. States and Territories have successively introduced their own restrictions on smoking in many public places.

## **Plain packaging**

Plain packaging legislation came into effect from 1 December 2012, requiring all tobacco products to be sold in standardised, plain packaging, with the aim of increasing the effectiveness of health warnings on the packets and reducing the brand appeal of tobacco products to consumers, providing a disincentive to those considering taking up smoking (particularly “young image-conscious teenagers”<sup>12</sup>).

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11 Tax Benchmarks and Variations Statement 2018

12 Preventative Health Taskforce, Technical Paper 2, page vi

The immediate effect of plain packaging cannot be isolated from the effect of other policies, particularly the 25 per cent increase in the excise rate in 2010 and the staged excise rate increases over the last few years. The effects of plain packaging are expected to grow over time as the take-up rate of smoking declines for young people, who are thought to be more susceptible to packaging and brand appeal<sup>13</sup>.

## The price of tobacco products<sup>14</sup>

Many of the recent policy changes affecting tobacco products have raised their price, with the aim of reducing consumption and increasing community health. The rate of tobacco excise increased from around 26 cents per stick in 2009 to around 62 cents per stick in 2017. The increase in the excise rate, and the associated GST, therefore increased the price of a packet of 25 cigarettes by around \$10 over the eight year period.

While policy targeted at the excise rate has been influential in price increases of tobacco in recent years, prices have increased significantly excluding the excise. This is illustrated through the example of a packet of Winfield 25s, which was one of the most popular brands by market share in recent years. Its price has moved similarly to other leading brands over the period<sup>15</sup>.

The recommended retail price (RRP) of Winfield 25s increased from \$12.40 in March 2009 to \$29.60 in March 2017. The increase, of \$17.20 over the eight years, includes an increase of \$6.60 per packet unrelated to increases in tax rates. Tobacco excise and GST accounted for 61 per cent of the price of a packet of cigarettes in March 2009 and remained at 61 per cent eight years later.

The non-tax component of the price therefore increased by 137 per cent over the eight year period, around the same as the increase in the excise component of 140 per cent. By comparison, the consumer price index (CPI) grew by 19.5 per cent over the same period<sup>16</sup>. Chart 4 shows the increase in the price, excise rate and non-tax components of a cigarette since the March quarter 2009 until March of each year on the axis, with the CPI growth since then charted for comparison.

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13 For more discussion of the effect of plain packaging on smoking take-up rates among young people, see the plain packaging post-implementation review:  
<http://ris.pmc.gov.au/sites/default/files/posts/2016/02/Tobacco-Plain-Packaging-PIR.pdf>

14 For statistics on market share and the price of individual brands of tobacco products, this section partly relies on the online resource *Tobacco in Australia*, which is compiled by the Cancer Council Victoria and funded by the Australian Government Department of Health and Cancer Councils in all states and territories.

15 See <http://www.tobaccoinaustralia.org.au/chapter-13-taxation/13-3-the-price-of-tobacco-products-in-australia>. Note that the prices are those in February for the years until 2013 and then in March for the years from 2014 onward. For simplicity the text references to 'March' are for either month within the March quarter.

16 Tobacco products are regularly sold at discounted prices. The consumer price index for tobacco, which is the measure of the actual sale price rather than the RRP, grew by 139 per cent over the same period, close to the increase in the RRP. While discounting of tobacco products continues, the degree of discounting does not appear to have materially changed over the years.

**Chart 4. Percentage increases in the components of the RRP of a pack of Winfield 25s since March 2009**

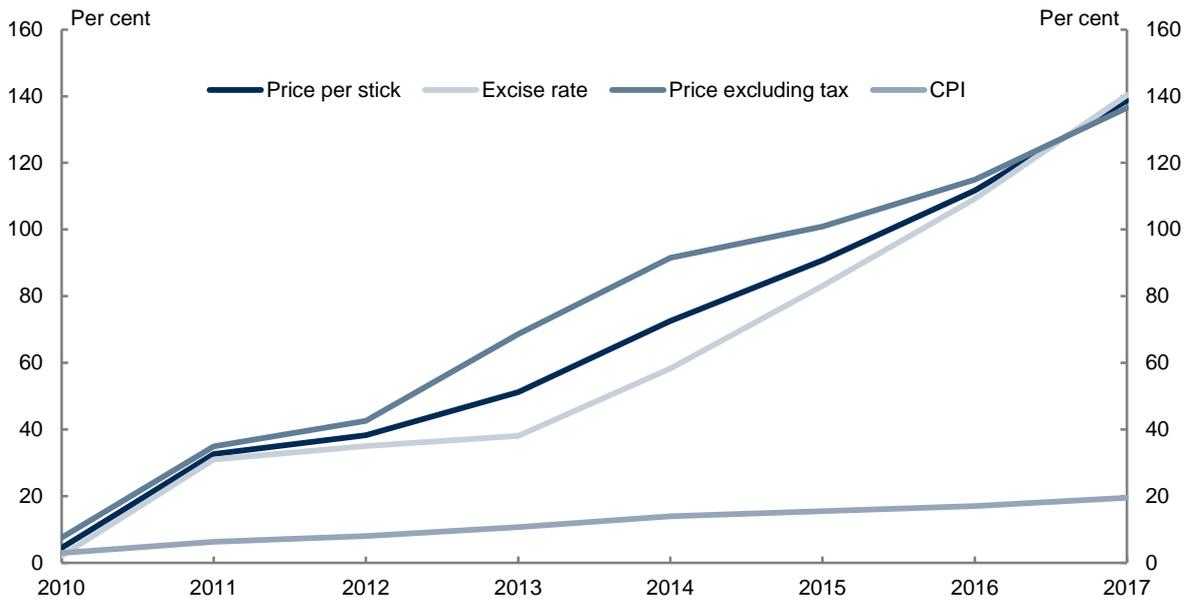
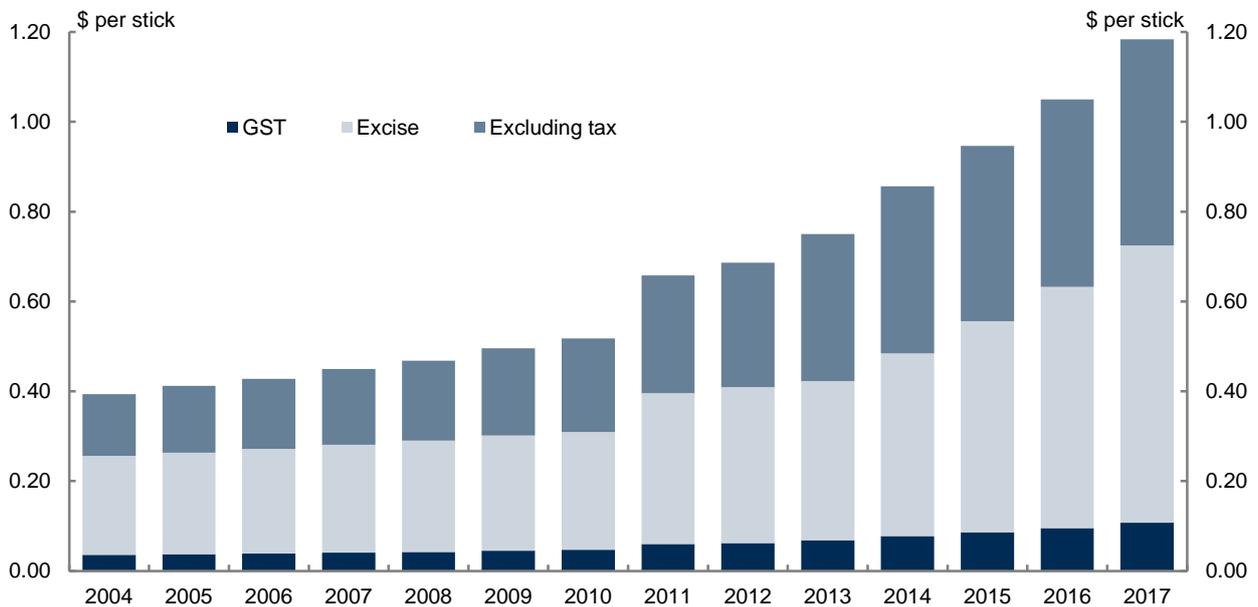


Chart 5 shows the history of the price composition of a packet of Winfield 25s in the month of March of each year. It shows that the May 2010 rate rise (seen in the chart in March 2011) was proportionally matched by increases to the price excluding tax over the next couple of years.

**Chart 5. Composition of the recommended retail price of cigarettes, per stick basis, Winfield 25s**



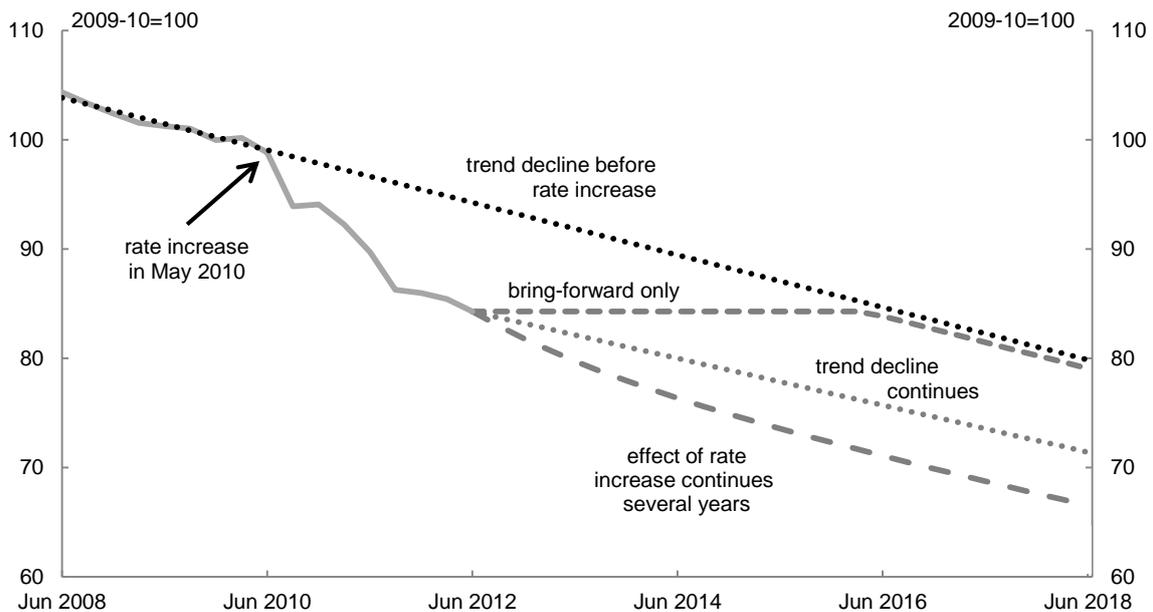
## The relationship between price and consumption

As shown in Chart 3, tobacco consumption has been on a long-term per-capita decline, while price has been increasing over the same period, with the rate of both having been pronounced in recent years. While the trend is clear, quantifying this relationship and what the consumption response will be to excise increases is less straightforward.

An illustrative example, using the 25 per cent increase in the excise rate in May 2010, may be used to draw out some of the complexities.

Chart 6 shows the consumption per capita of tobacco products<sup>17</sup> in the years around the excise rate increase, including the trend decline leading up to May 2010 and the rapid fall in consumption over the next two years. In reality the impact of the May 2010 rate increase beyond 2012 is complicated by further rate increases over the following years. The chart shows three illustrative scenarios which assist in framing the discussion of what may have occurred after 2012 had there been no further policy change.

**Chart 6. Illustrative scenarios for the long-term impact of the May 2010 excise rate increase: consumption per capita of cigarettes and tobacco (2009-10 = 100)**



First, the large decline in smoking may have been driven by people who would have stopped smoking anyway over the following years. In this scenario, the rate increase simply brought their change in behaviour forward, with the result that there are no further falls in smoking and after some years (ten years in the illustrative example) consumption of tobacco products is the same as what it would have been had the rate increase not occurred. In this case, the rate increase had a significant short-run impact but no long-run impact.

The second illustrative possibility is that, following the rate increase, the decline in smoking continues at the same trend rate, but from a lower 'base'. In this case, the rate increase had substantial short-run impact but no *additional* long-run impact.

The third possibility is that the rate increase, in addition to the strong short-run impact, continues to cause smokers to reduce their consumption over several more years.

Further policy from 2013 means that it is not possible to distinguish between the longer-term impact of the 2010 rate rise and the additional impact of later rate rises (as well as other policies such as plain packaging). In reality, there will have been subsets of smokers who responded in each of these illustrative ways.

17 Australian System of National Accounts 5206.0

The *price elasticity of demand* (elasticity) is the measure of the impact a price change has on quantity consumed: if the price of a product increases by 1 per cent then the elasticity is the per cent change in the volume of the product consumed. Price elasticities are usually negative because volumes typically fall when prices increase.

There is a range of elasticity estimates for tobacco in the relevant literature. The World Bank estimated an elasticity of demand of -0.4 in 1999 for developed countries<sup>18</sup>, and in 2011 the International Agency for Research on Cancer suggested this had not changed substantially over the decade<sup>19</sup>.

A price elasticity of demand in Australia can be calculated using time-series tobacco consumption and price data from the Australian National Accounts<sup>20</sup>, resulting in an elasticity which has varied over a long timescale. Estimated over the twenty-five years to 1980-81, the relative short-term (same year) price elasticity for tobacco consumption was around -0.25 to -0.30, only around half of the elasticity of around -0.5 for the twenty-five years to 2017-18, indicating that smokers may have become more sensitive to price over time<sup>21</sup>.

The price elasticity may not be linear, since a large price increase may result in a different impact compared to a sequence of small price increases, although Chart 3 showed that the last forty years have featured time intervals of somewhat regular periods of stable price increases and volatile price increases. The price elasticity of any product may also change over time if key features of the population and/or the economic context change. For tobacco elasticity, some of the factors will include how long the individuals have been smoking, how much they smoke, their income level and age, and their awareness of health issues.

For example, a feature of many studies<sup>22</sup> is that younger people are more sensitive to price than adults. This means that if young people were already priced out of the market by earlier excise rate increases, or deterred from taking up smoking by non-price factors such as health campaigns, then further excise rate increases will be targeting a population that is older on average than it had been for earlier excise rate increases, and hence a more inelastic demand curve.

Looking at the last few years shows that with a series of proportional excise rate increases, the decline in consumption has not been the same. In each of the last four years, the price deflator for tobacco products increased by between 10 per cent and 12 per cent. The falls in consumption fell by between 3 per cent and 13 per cent in each year, illustrating that the relationship between price and consumption is likely to be complicated by other factors and that the relationship is not instantaneous. As a general rule-of-thumb, the Australian data indicates that over two thirds of the impact on smoking occurs in the year of the price rise, with up to one third of the remaining impact in the following year.

## Tobacco excise as part of the Commonwealth tax mix

The significance of tobacco excise to the Commonwealth tax system is determined by the balance between declining clearances and increasing excise rates. Given there has been a strong trend decline in tobacco consumption per capita over the last four decades (see Chart 3), tobacco excise increasing as

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18 Curbing the Epidemic, 1999.

<http://documents.worldbank.org/curated/en/914041468176678949/pdf/multi-page.pdf>

19 Effectiveness of Tax and Price Policies for Tobacco Control, 2011

<http://www.iarc.fr/en/publications/pdfs-online/prev/handbook14/handbook14.pdf>

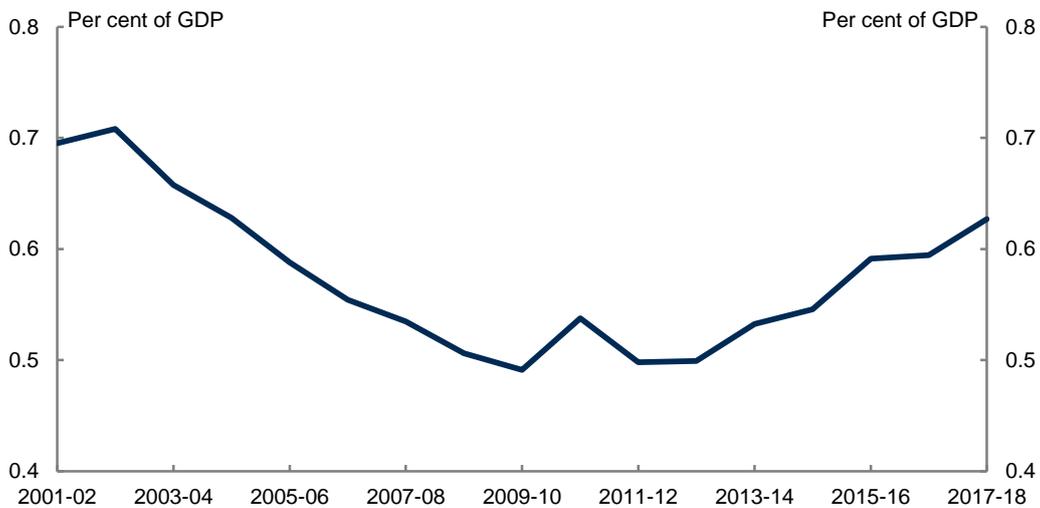
20 Australian System of National Accounts 5204.0

21 The standard error for tobacco price elasticity estimates from time-series models is typically around 0.1, resulting in a 95 per cent confidence interval of -0.3 to -0.7.

22 Effectiveness of Tax and Price Policies for Tobacco Control, Chapter 7, discusses the price elasticity of demand for young people, with estimates in high income countries ranging from -0.5 to -1.2.

a percentage of GDP is a result of the excise rate increasing enough to offset the lower consumption. Chart 7 shows the decline and increase in tobacco excise as a percentage of GDP since 2001-02.

**Chart 7: Tobacco excise as a percentage of GDP<sup>23</sup>**



The period from 2000-01 to 2008-09 contained no excise rate increases beyond indexation, and with the exception of 2002-03, tobacco excise declined as a percentage of GDP in every year over that time. 2010-11 was the first full year after the 25 per cent excise rate increase in May 2010, and saw a significant increase in excise collections. The next excise rate increase above the indexation rate was in 2013-14. Tobacco excise has increased as a percentage of GDP in every year since then, and is forecast to continue to do so until the last scheduled non-indexation increase in 2020-21. Absent further large excise rate increases, it would be expected that tobacco excise would decline as a percentage of GDP beyond 2020-21, albeit at a slower rate than from 2002-03 to 2009-10 because of indexation to wages rather than prices.<sup>24</sup>

## FORECASTING TOBACCO EXCISE

### Parameter and collections

Revenue forecasts are based on forecasts of the relevant components of the economy, called ‘parameters’. Tobacco excise forecasts are based on forecasts of two parameters: the quantity of tobacco products consumed and the rate of increase in average weekly ordinary time earnings (AWOTE), which currently determines the indexation of the excise rate (formerly the CPI). These parameters are generated as part of a coherent whole-of-economy approach to macroeconomic forecasting.

Growth in household consumption is forecast with reference to recent developments and expectations for household income and wealth, with the tobacco component of this determined using a forecast combination modelling approach as outlined in Treasury Working Paper 17-04, *Forecasting Household Consumption Components: A Forecast Combination Approach*.<sup>25</sup>

<sup>23</sup> The 2017-18 data point is an estimate.

<sup>24</sup> Under the assumption that growth of average weekly ordinary time earnings is lower than consumer price inflation.

<sup>25</sup> This paper steps through Treasury’s approach to forecasting the components of household consumption, including tobacco. It is available at: [https://static.treasury.gov.au/uploads/sites/1/2017/09/C2017-T188982\\_Consumption-Splits.pdf](https://static.treasury.gov.au/uploads/sites/1/2017/09/C2017-T188982_Consumption-Splits.pdf)

Growth in AWOTE is forecast in the context of the labour market as a whole, including employment supply and demand, and general wage and price pressures.

In the medium-term, which covers the period beyond two years in the future, these parameters are projected consistent with Treasury's economic projections framework, which assumes that the 'output gap' is closed over several years<sup>26</sup>.

In addition to the economic parameters, estimates for revenue for the current year also incorporate recent trends in tax collections and other relevant factors such as the number of collection days in each month<sup>27</sup>.

In recent years the forecasts have accounted for the switch in collections of tobacco excise from majority ATO to entirely Department of Home Affairs. This temporarily increased the difficulty of interpreting clearances, as importers may have cleared their stock in a different annual pattern compared to when they were manufacturing in Australia – this is discussed further below.

Changes in policy, particularly to the excise rate, have had a large effect on how much tobacco excise has been collected recently and will be collected over the next few years<sup>28</sup>. In general, forecasts are first generated on a 'no policy change' basis, followed by the addition of new policy decisions. The impacts of policy changes may later be incorporated into the modelling ('endogenised').

## FORECASTING CHALLENGES AND RISKS

### Stockbuilding

While tobacco consumption is used as the tax base for tobacco excise, in practice excise is levied on clearances of tobacco goods through the excise system. Clearances patterns do not precisely reflect consumption as there is typically a lag between the product being cleared by the importer or wholesaler and being sold to the consumer. Tobacco products cleared but not sold will enter the inventories (stocks) of the wholesaler or retailer, which vary over the course of each year partly reflecting seasonal patterns in demand.

In recent years, there has been an increase in the stocks held by tobacco distributors. Chart 10 shows the estimated aggregate value of tobacco products held as stock at year's end. This increase in stockbuilding has contributed to the difficulty in forecasting.

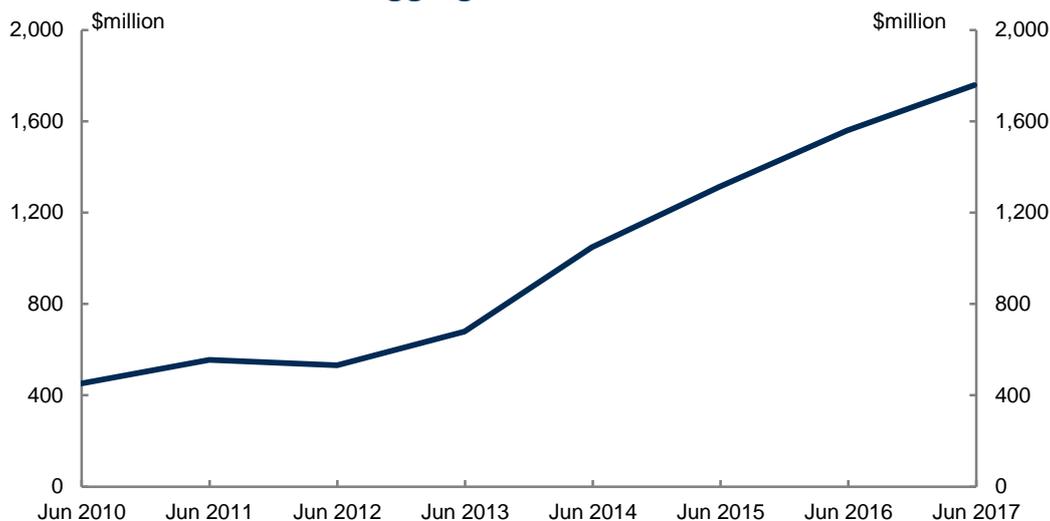
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<sup>26</sup> For a description of Treasury's economic projection framework in the medium term, see *Budget 2018-19* p. 7-18

<sup>27</sup> In the past, tobacco excise collected by the ATO was paid on a Monday, such that months may have had four or five collection days. Recent years of 53 Mondays were 2007-08 and 2013-14, with the forecasts being around two per cent higher in those years than they would have been otherwise.

<sup>28</sup> An additional policy change affecting future tobacco excise was announced at *Budget 2018-19*. From 1 July 2019, importers of tobacco will be required to pay all duty and tax liabilities upon importation. This is a change from the current system, where tobacco can be imported and stored in licensed warehouses prior to tax being paid.

**Chart 10: Aggregate value of stock held<sup>29</sup>**



If tobacco is cleared as stock and then not sold, it can be cleared back through the tax system for a refund of the excise. Refunds of excise are negligible compared to the excise, however, so it is assumed that all tobacco products cleared are eventually consumed.

The build-up in stocks is likely to be partly a result of the relocation of the tobacco manufacturers offshore, ending domestic production and hence requiring transitional stocks and a different strategy on stocks-to-sales in the long term. The build-up may also reflect clearances before excise rate increases. The future trajectory of the stocks-to-sales ratio, and hence the relationship between clearances and consumption, will depend on the relative (but unknown) importance of these two factors.

### Switch to lower-priced substitutes

One possible effect of increasing tobacco prices is that consumers switch to low-priced substitutes rather than lowering their tobacco consumption. This presents an upside risk to the tobacco excise forecast which predicts smokers cutting back consumption consistent with past patterns. Substitution to lower-priced licit tobacco has no impact on excise collections, as tobacco excise is levied on the quantity of tobacco rather than its value.

There is evidence that this substitution to lower priced licit tobacco has been taking place. In the period 2010 to 2014, based on supermarket data, sales of 'super-value' (low-cost) brands rose sharply while mainstream, premium and value brands all fell, as total sales fell slightly. Some brands have been relaunched as super-value, such as Rothmans in 2014<sup>30</sup>, in an effort to maintain or regain volume shares while the excise rate is increasing. If substitution behaviour by consumers and producers continues, then collections may be higher than forecast, at least in the short term.

### The duty free and illegal tobacco markets

One ongoing difficulty in forecasting tobacco excise is the extent of black market tobacco consumption. While tobacco consumption has a relatively steady base due to the high proportion of a given population of smokers that are likely to still be smoking the next year, the size of the excise base is less

<sup>29</sup> Unpublished ABS data (quarterly business indicators), including an allowance for stocks held by retailers and smaller wholesalers. Figures are for the end of each financial year.

<sup>30</sup> <http://www.tobaccoinaustralia.org.au/chapter-10-tobacco-industry/10-7-market-share-and-brand-share-in-australia>

predictable if those smokers are substituting illegally-sourced tobacco for legally purchased tobacco, or if crackdowns on the availability of illegally-sourced tobacco force smokers back into the legal market.

From this forecasting perspective, tobacco excise is modelled on a 'base-plus-growth' approach, where the latest known outcomes are forecast to grow according to the relevant economic parameter. This means that the forecasts implicitly allow for black market consumption, to the extent that it exists in the historical base year.

Changes in the size of the illegal tobacco market are driven by the demand and supply for the product. The demand is likely to be driven by a range of factors, including the price of legal tobacco, and as such it would be expected that demand for illegal tobacco would increase as the excise rate increases. Efforts to counter this increased demand have been targeted at restricting the supply side. In recent years the chain of supply has been affected by the cessation of legal Australian tobacco production, as in the absence of legal local producers illegal tobacco would now be sourced primarily from foreign countries, with a small quantity of local illegal production still presenting a small revenue risk<sup>31</sup>. Illicit tobacco goods weighing around 406 tonnes were detected at the border in 2017-18<sup>32</sup>. Large changes in the extent of the illegal tobacco market present a risk to the tobacco excise forecasts.

The use of illicit tobacco may continue to present challenges to tobacco excise forecasting in the future. The 2018-19 Budget included the measure *Black Economy Package — combatting illicit tobacco*, which increases funding to tackle the main three sources of illicit tobacco in Australia: smuggling, leakages from licensed warehouses and domestic production. It is anticipated that this measure will reduce the size of the illicit tobacco market through additional enforcement capabilities. In turn, this measure is estimated to have a gain to revenue as some smokers switch from illicit to licit tobacco, which is subject to excise.

## SUMMARY

Tobacco excise forecasting must account for underlying trends in tobacco consumption, driven by popular awareness of health risks, and the effect of policy changes, including changes to the excise rate. While tobacco consumption as the theoretical base of tobacco excise could be expected to be relatively predictable, the effect of policy changes and risks to the forecast from changing producer and consumer behaviour and the illegal tobacco market pose a challenge to accurately forecasting how much tobacco excise the Government will receive each year.

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31 ATO submission to the Inquiry into Illicit Tobacco by the Parliamentary Joint Committee on Law Enforcement, March 2016.

32 2017-18 Department of Home Affairs Annual Report